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ABSTRACT

A competency-based assessment procedure for the training and selection of preschool teachers has been developed using the content validation strategy and a variety of measurement techniques. Those certified under this procedure will be called Child Development Associates. A list of competencies, generated and agreed upon by a large number of Child Development experts, is the starting point for the assessment procedure. The competency list was developed under the Department of Health, Education, and Welfare, Office of Child Development, by a task force, the Child Development Consortium, Incorporated. The task force established six major areas of responsibility for preschool teachers, developed a preliminary set of competencies under each of six major areas and added a set of personal capacities necessary for relating to children. The competencies were then validated by means of a survey of practitioners and others in the field. An interdisciplinary team approach was used which might be a model for the development of other competency-based assessment procedures. Methodology is described in terms of professional expertise and roles and step-by-step procedures used. A few examples of competencies are appendixed. (Author/MS)

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COMPETENCY ASSESSMENT PROCEDURES FOR TRAINING AND CERTIFYING THE CHILD DEVELOPMENT ASSOCIATE

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Abstract

A competency-based assessment procedure for the training and selection of pre-school teachers has been developed using the content validation strategy and a variety of measurement techniques. An interdisciplinary team approach was used in a manner that could be reasonably and successfully employed in the development of other competency-based assessment procedures.

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COMPETENCY ASSESSMENT PROCEDURES

FOR TRAINING AND CERTIFYING THE CHILD DEVELOPMENT ASSOCIATE

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PROBLEM

The problem herein is to develop a competency-based certification procedure for pre-school teachers, such as those teachers in Head Start. Those certified will be called Child Development Associates (CDAs). The move toward CDA certification is an attempt to increase the quantity and improve the competency of pre-school teachers. Assessment procedures are to serve both the diagnostic purpose of indicating the type and extent of training needed by an individual CDA candidate and the certification purpose by indicating that the pre-school teacher is, in fact, competent in this "new" profession. Though the CDA trainee may acquire college credits and possibly even a degree, the credits are not to be requirements and, in fact, may be irrelevant to the certification process.

A list of competencies, generated and agreed upon by a large number of Child Development "experts", is the starting point for the assessment procedure. This competency list was developed under the impetus of the Department of Health, Education and Welfare, Office of Child Development by a task force called the Child Development Consortium, Incorporated. The task force established six major areas of responsibility for pre-school teachers, developed a preliminary set of competencies under each of the six major areas and added a set of personal capacities necessary for relating to children. The task force then had their set of competencies validated by means of a survey of practitioners and appropriate others in the field, obtaining ratings and suggestions. (See Appendix A for examples of the competencies.)

Various early childhood programs throughout the country have been charged with the responsibility for developing training programs and assessment devices for the CDA, based on the resulting set of competencies. The development of assessment procedures reported herein is being sponsored by the Iowa Head Start Training Program headquartered in the Department of Child Development at Iowa State University. Although the assessment procedures are being locally developed, they are expected ultimately to meet minimal, though yet undefined, national criteria.

METHODOLOGY

There are two major aspects to the methodology being utilized in meeting this problem. One important aspect is the interdisciplinary professional expertise of the persons attacking this problem and the roles of each in this undertaking. The second aspect is the step-by-step procedures followed by each professional and the team as a whole.

Professional Expertise and Roles

There were four specific professional competencies involved as follows:

1) A professional in the area of Educational and Psychological Measurement, who outlined procedures, instructed others, monitored processes, and provided technical support.

2) A counseling psychologist with item-writing skills, who functioned mainly as a coordinator and group facilitator.

3) An administrator responsible for a state-wide staff training program and liason with the University Department of Child Development.

4) A university instructor and pre-school teacher/trainer, who worked with Child Development faculty, graduate students and pre-school teachers.

The latter group met almost weekly for many months with the counseling psychologist for purposes of review, discussion and assignments. The measurement person and the administrator met with the group as needed. This procedure has insured the appropriateness and relevance to the assessment procedure while providing "in-service measurement training" to the content area specialists.

Step-by-step Procedures

1) Formal ratings of the original list of competencies on an "importance" scale were made by local Child Development faculty and graduate students and by Head Start trainers. Why? Because this gave us a basis for judging which of the competencies we should place most emphasis on or those which should be eliminated, and it gave a basis for weighting different parts of the final product.

2) The group discussed each competency in detail for purposes of clarification and assessment approach. That is, the competency statements were carefully reviewed in order to interpret and clarify their meaning, to

assess overlap in statements, to consider what types of behaviors or knowledge would demonstrate each of the competencies, and, subsequently, to consider the way(s) in which a given competency best be assessed. In other words, could a particular competency best be assessed through multiple-choice items, true-false statements, written short-answer items, structured experiences (to be video-taped and rated) or some combination thereof.

3) Next, the content area specialists were asked to begin independently to write out assessment items and procedures as well as formal answers for each with formal scoring or rating procedures or guidelines to be used by an evaluation team. They were asked also to define the minimal acceptable level of each competency. At the beginning of this process, individuals were not assigned specific competencies to work on. We believed that more enthusiasm and confidence would be generated for the task if each person began by working on those competencies with which he/she felt most capable or interested in. This also helped to build up an item pool so that we would later have more to select from.

The group met with the counseling psychologist about every two to four weeks to critically review the items (or procedures) generated, the answers and the guidelines. Some items were thereupon eliminated, others revised. After several meetings, we began to assess which specific competencies were lacking items and individuals were then assigned to work on those competencies.

Efforts to date have been focused primarily upon the written assessment. At the time of this writing, only the basic elements of the structured experiences have been set forth and work on the details is just beginning. Some examples of the structured experiences to be used are as follows:

a) The trainee will be charged with responsibility for planning and supervising classroom activities for perhaps two separate half days. The trainee will be given some directions as to the nature of the activities he/she should plan for. This will be done in order to standardize activities across trainees and the competencies which are likely to be demonstrated "on the job". These classroom sessions will be video-taped; judges will later view the tapes and, following the guidelines set forth, will rate the trainee's performance on the appropriate competencies.

b) A number of carefully selected actual or role-played situations will be video-taped. These may include such things as children on a playground engaged in disruptive or dangerous activities or a film of an irrate parent, being critical of the program. The trainee will be shown these brief films and asked to respond with how he/she would handle these situations.

4) Written items were carefully selected and compiled into a two-part assessment tool. Part I was made up of the objective multiple-choice and true-false items: Part II was made up of the written short-answer items which will be judged by an evaluation team.

5) A trial administration of both parts of the assessment procedure was carried out with a small group of graduate students, faculty members and Head Start trainers, who had not been previously involved in the project. These testees were asked to answer the items, to critically review the items for clarity of meaning and appropriateness, to offer suggestions and to note the amount of time it had taken them to answer the items. Feedback from the testees was utilized to re-edit the items. After re-editing, the assessment procedure was again administered to a different and larger group of testees; it was then re-edited again.

6) The objective items were administered to 79 Head Start personnel and to 42 first-year college students in a Child Development course. The 32 items had a score range from 14 to 31, a mean score (for all 144 subjects) of 24.9 and a standard deviation of 3.6. The KR-20 reliability estimate was 0.68. The item-score correlation data indicated that only one item needed clarification or re-writing. The average score for the Head Start personnel (24.7) was slightly above the average score for the first-year college students (23.9). The scores of the Head Start personnel were considerably more variable than the scores of the students (standard deviation of 4.0 versus 2.8). Some of the Head Start personnel were directors and trainers, which accounted for 24 Head Start personnel scores of 28 and above, whereas, only six students received a score of 28 and no student received a score above 28. On the other hand, six Head Start personnel received scores below 18; no student scores below 18.

This data is interpreted to indicate that the objective items are probably measuring in a suitable way, and the only way to improve the reliability of this part of the assessment procedure substantially would be to increase the number of items. However, as the objective items are only a part of the assessment procedure, it was decided that a KR-20 reliability of about 0.70 for this part of the assessment would be satisfactory.

7) The written short-answer items are being independently judged by a four-person team using the model answers or guidelines previously written as criteria. At this writing, this task is not complete. The reliability of the scoring for this aspect of the assessment is being estimated by intercorrelating the ratings by the judges for all items and for all subjects, then using the Spearman-Brown average inter-item procedure to estimate the reliability of the average rating, where the average is the sum of the points assigned to a particular subject on a particular item divided by the number of raters or judges. This estimated reliability uses the formula $\frac{nr}{1 + (n-1) \times r}$ where "n" is the number of raters or judges and "r" is the average off-diagnol correlation between the raters.

8) The final step that will be used to definitely establish the content validity of the entire assessment procedure is to use six to 12 "experts" who, as a first step, will be asked to document in writing their qualifications (education and experience) as experts. This panel will then be furnished with the entire list of objectives to be assessed and a copy of the complete assessment procedure. They will be asked to judge independently in two ways:

a) They will first indicate for each item or element of the assessment procedure the objective(s) they believe is being measured.

b) They will then rate each item or element on a five-point scale from "completely inappropriate" to "most appropriate" for measuring the objective which they indicated in "a" as being measured.

Hopefully, there will be a strong consensus about the objective being measured by each item or element of the assessment procedure and the five-point "appropriateness" rating for each item or element will average 4.0 or above. One of the authors has utilized these same stepwise procedures for developing an assessment procedure and formally establishing content validity for over 250 classes of jobs. In every case, the above criteria have been met.

UTILIZATION

Throughout the development of the assessment procedure, a minimum acceptable competency has been defined for each objective. Therefore, in using the assessment procedure in the certification process, it will be required that the candidate score above the minimal acceptable level on every competency assessed. It is recognized that the reliability of the assessment procedures for measuring individual competencies will be low when there are very few assessment items or procedures that pertain to one competency. However, as it would be a much more expensive and time-consuming task to develop procedures that would have high reliability for each objective measured (both in development and in administration), it seems more feasible to require that the candidate score above the minimal level on every competency and that the combined score over all competencies be set for passing at a level at least one standard error of measurement above the score that would be obtained if the candidate attained only the minimal level on every competency.

The assessment procedure would also be used to determine needed areas of training. In this way, the procedure is administered as a "pre-test" as well as a final test, with the training effort being focused on the areas of greatest need as indicated by the initial assessment.

The assessment procedure is not designed to be administered in one session. Rather, both the initial assessment of the new candidate prior to training and the final assessment for certification can be administered over a period of several days, a week, or even more. Then too, on completion of a certain area of training, that part of the assessment procedure may again be administered before the candidate moves on to focus on another training area.

DISCUSSION

It is feasible to develop competency-based assessment procedures which can meet professional standards for reliability and validity. The resulting assessment procedure has many of the desirable attributes espoused by those opposing "criterion-referenced" testing or assessment. However, the validity of the procedure is determined by the age-old "content" method, utilizing a formal and independent judgment process by experts. Also, the reliability of the objective aspects of the assessment is being estimated by procedures commonly used in norm-referenced tests. When the assessment product is used in the certification process, however, it is not expected that the reliability, if again estimated, will be as high; it is expected that the variance of the scores obtained by the certificands will be quite low.

Although the procedure for developing the assessment tool is quite straight-forward, the process is not easy; it is time-consuming and expensive. In order to develop a quality assessment product, it is required that content area specialists become more knowledgeable in the area of measurement and the measurement specialists be sensitive to the needs and expertise of the content area specialists. The actual group process is most important. The participants need to perceive a sense of learning and accomplishment, thus progress. The team felt that precipitously setting target dates could result in a lower quality product, yet it was felt that it was necessary to keep moving so as to perceive progress.

In a way, the greatest frustration with this effort has been the lack of understanding on the part of federal and regional officials. Asking each locality to develop its own assessment procedure may seem desirable to many people; however, every locality is not likely to have the professional resources necessary in order to develop a quality product. Further, this work has been undertaken with the understanding that the assessment procedures must meet as yet undefined minimal criteria, to be specified at the national level. In fact, it is not known (and even seems somewhat unlikely) that these minimal criteria will concern the psychometric qualities of the assessment procedure and/or developmental methodology.

The group seems well satisfied with the effort and progress and is anxious to complete the project. They feel that the end is in sight and that the result will be a quality product.

APPENDIX A

EXAMPLES OF COMPETENCIES

In the examples given below, those items underscored are some of the major areas of responsibility listed for pre-school teachers. Each area presented herein is followed by an example of a competency item or statement within that area of responsibility.

"Advancing Physical and Intellectual Competence"

"Provide varied opportunities for children's active participation, independent choices, experimentation and problem-solving within the context of a structured, organized setting and program."

"Stimulate focused activities: observing, attending, initiating, carrying through, raising questions, searching answers and solutions for the real problems that are encountered and reviewing the outcomes of experience."

"Building Positive Self-concept and Individual Strength"

"Give direct, realistic affirmation to the child's advancing skills, growing initiative and responsibility, increasing capacity for adaptation, and emerging interest in cooperation, in terms of the child's actual behavior."

Examples of personal capacities essential for pre-school teachers:

"To be sensitive to children's feelings and the qualities of young thinking"

"To be able to protect orderliness without sacrificing spontaneity and child-like exuberance"

"To be able to exercise control without being threatening"